Amendments to the Claims

This listing of the claims will replace all prior versions and listings of claims in the application.

1. (Currently Amended) A bioactive artificial sintered composition for supporting bone cell activity, said composition comprising:

a powder or bulk material of stabilized ~~insoluble~~ tricalcium phosphate insoluble in physiological fluids wherein the tricalcium phosphate is stabilized with stabilizing entities uniformly thoughout the entire composition, and wherein said uniformly stabilized tricalcium phosphate is resorbable by osteoclasts and promotes secretion of mineralized bone matrix by osteoblasts,

wherein said stabilizing entities are selected from the group consisting of silicon entities, aluminum entities, barium entities, titanium entities, germanium entities, chromium entities, vanadium entities, niobium entities, boron entities and mixtures thereof.

2. (Original) A composition as claimed in claim 1, wherein said stabilized tricalcium phosphate is primarily alpha tricalcium phosphate.

3 to 5 - Cancelled

6. (Previously Presented) A process as claimed in claim 13, wherein said stabilizing entities are provided as a solution.

7 to 9 - Cancelled

10. (Previously Presented) The process as claimed in claim 6, wherein said stabilizing entities are a solution of tetrapropyl orthosilicate.

11 - Cancelled

12. (Currently Amended) A composition as claimed in claim 1, wherein said ~~composition is insoluble in~~ physiological fluids have a of pH of approximately 6.4 to 7.3.

13. (Previously Presented) A process for making the composition of claim 1, said process comprising:

doping and mixing a hydroxyapatite substance with a composition of stabilizing entities to uniformly distribute said stabilizing entities throughout said entire hydroxyapatite substance;

and sintering said uniformly doped hydroxyapatite substance;

wherein sintering converts at least a portion of said uniformly doped hydroxyapatite substance into primarily alpha tricalcium phosphate.

14 to 21 – Cancelled

22. (Previously Presented) The process of claim 13, wherein sintering is done at temperatures of about 900°C to 1100°C.

23. (Previously Presented) The composition of claim 1, where said composition is provided as a microporous polycrystalline structure.

24 – Cancelled

25. (Previously Presented) The composition of claim 23, wherein said structure has said globular morphology of Figure 14.

26. (Previously Presented) The composition of claim 25, wherein said morphology comprises rounded granules with a lateral dimension of about 0.5 to 1μm.

27. (Previously Presented) An implantable calcified bone matrix comprising:

a) the composition of claim 1 forming a structure for supporting said bone matrix;
and

b) a calcified bone matrix secreted by osteoblasts on said structure.

28. (Original) An implantable calcified bone matrix of claim 27, wherein said matrix is free of bone cells including osteoblasts.

29. (Original) An implantable calcified bone matrix of claim 27, wherein said matrix includes a patients bone cells including osteoblasts.

30 to 31 – Cancelled

32. (Previously Presented) The composition of claim 23, wherein said composition has an internal macroporosity.

33. (Previously Presented) An implantable device coated with the composition of claim 1 or 2.

34. (Original) An implantable device consisting essentially of the composition of claim 1.

35. (Previously Presented) A method for the culturing of functional bone cells, said method comprising:

applying a suspension of bone cells in physiological media to the composition of claim 1 provided as a substrate.

36 – Cancelled

37. (Previously Presented) A method of the *ex vivo* engineering of a mineralized collagenous implant, the method comprising the steps of:

a) providing the composition of claim 1 as a bulk material;

b) applying a suspension of osteoblasts on said composition and incubating for a time sufficient for said osteoblasts to secrete mineralized collagenous bone matrix on said bulk material; and

c) implanting the product of step (b) in a patient.

38. (Previously Presented) The composition of claim 1, wherein said stabilizing entities are silicon.

39 to 46 – Cancelled.